

## OBSERVATIONS ON THE HORNED SCREAMER

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Very little has been reported on the habits and behavior of screamers, aberrant anseriformes in the family Anhimidae. The Crested Screamer, *Chauna torquata*, is perhaps the best known, based on the descriptions of Hudson (1920) and Wetmore (1926). The other two species in the family, *C. chavaria* and *Anhima cornuta*, are known primarily from observations of zoo birds (Lint, 1956; Bell *et al.*, 1970). During a recent visit to Colombia, South America, we were able to study briefly the behavior of the Horned Screamer, *A. cornuta*.

The study area at Lake Mozambique was 70 kilometers east of Villavicencio in Meta Province, on the western edge of the llanos. The lake achieves a maximum width of about 2 kilometers in the wet season, from April to December, when the water level rises three meters or more. Our stay at Lake Mozambique extended from 19 to 28 February 1970. This corresponded with the latter part of the dry season, with the lake near its lowest level and the green growth of the exposed shores still young and tender.

### GENERAL HABITS AND NUMBERS OF SCREAMERS

All the Horned Screamers were concentrated along the borders of the lake. During the early morning they perched conspicuously on tops of trees and large bushes near the lake edge, where they were easily observed from our boat on the lake. Our observations began at dawn and continued for about three hours, until the birds dropped to the ground and usually out of sight, to feed. We also made a few observations at midday and in late afternoon.

The Horned Screamers that we observed were usually in pairs, but single birds were also seen. These singles would frequently join a pair, and a pair would sometimes join another pair. The largest group of individuals together that we saw was six birds. Individual groups were rarely spaced closer than 25 m and were usually 100 m or more apart. Of the total population of 35 screamers on the lake, approximately 26 were stationed as groups along the southwestern border of the lake. The rest were isolated groups of one to four birds stationed at about one-half mile intervals along the lake edge. These groups kept to themselves and at no time appeared to intermingle. The entire population of this general area seemed to be concentrated at the lake.

During our observations the birds were usually sedentary. Individuals remained on a single perch for as much as two hours during the early morning, prior to feeding, and even when feeding they tended to remain within 100 meters of their perches. The relocations that did occur rarely involved flights of more than 200 m. During the eight mornings of observing screamers on the southwestern lake shore, we saw only three or four flights of as

much as 400 m. One bird was seen flying across the lake, a distance of approximately 1000 m. To our surprise, it steadily lost altitude when half-way across, bounced off the surface of the lake 100 m from shore, and skimmed to a perch only two meters high.

No birds were seen soaring during our ten-day stay, although by 09:00 each day cumulus clouds had formed and on many occasions Wood Storks (*Mycateria americana*) were soaring. Henry Mirick, H. R. Roberts, and the resident manager, A. Fisher, never saw soaring during observations of screamers that covered three years at the lake (pers. comm.). This differs from *C. torquata* which frequently soars for hours, even on windless days, and attains great heights (Hudson, 1920; Wetmore, 1926; Gill, pers. obs.).

The screamers were not nesting at the time of our visit in February, but W. J. Smith (pers. comm.) found three nests with eggs in August 1969, and H. R. Roberts (pers. comm.) photographed a nest with three eggs on 2 December 1971. The nest found by Roberts was a mat approximately one meter in diameter comprised of dried marsh grasses. The nest was 8–10 cm deep and was just floating in about 8 cm of water.

#### VOCALIZATIONS

We were able to distinguish three basic vocalizations (Fig. 1).

*Moo Co*—a bisyllabic call in which the second syllable was distinctly lower in frequency than the first. The quality of this call varied from fairly pure melodic notes to harsh barking or coughing notes. Such variation may, in part, have reflected sexual differences (see below). The intensity of *Moo Cos* also varied from soft vocalizations that can be heard only when close to the bird to loud calling that can be heard up to a mile away. On some occasions the first syllable was given without the second. *Moo Cos* were usually repeated at 3–10 second intervals.

Isolated pairs of screamers often gave *Moo Cos* together in a duetting sequence. The result was a trisyllabic vocalization, *Ha Moo Co*, or sometimes, *Ha Moo-o Co*. Such duets consist simply of an overlap of one bird's second note with the other bird's first note. To our knowledge the trisyllabic vocalization was never given by a single screamer. This calling is responsible for the screamers' local name, *jamuco*.

Lint (in litt.) observed a single breeding pair of these screamers at the San Diego Zoo and found that the male's voice was louder and deeper pitched ("baritone to tenor") than the female's ("alto to contralto"). We were able to distinguish similar vocal differences between members of a pair that gave *Ha Moo Co* duets at our close approach. The second voice was lower pitched and harsher, almost a barking, than the other. Lint's observations lead us to believe that this was the male.

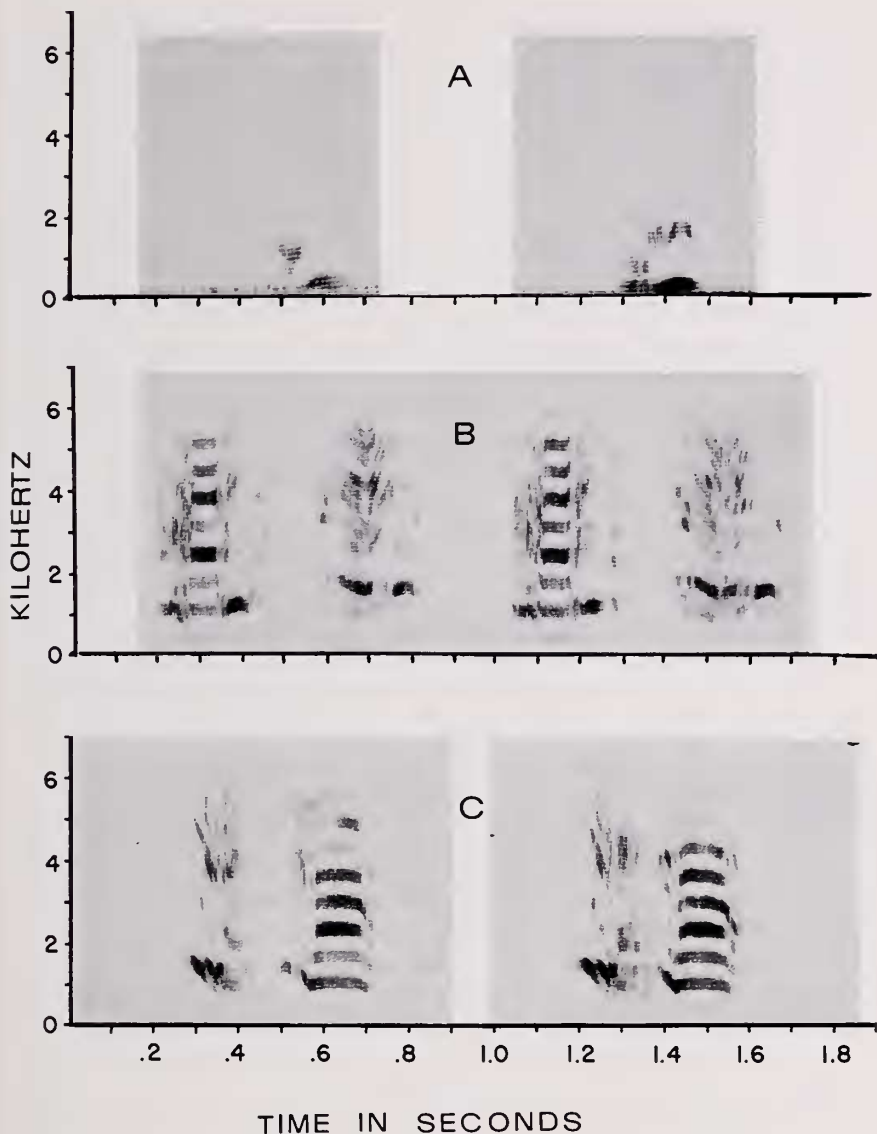


FIG. 1. Horned Screamer Vocalizations. A. Moo Co; B. Honking; C. Trumpets.

*Honking*—goose-like calls of two distinct patterns, given in various combinations including in alternation. One of the two patterns had seven to eight strongly developed harmonics spaced at intervals of about 750 Hz above a fundamental frequency of about 450 Hz (Fig. 1). The dominant frequency

(darkest harmonic on the spectrogram) was at 2600 Hz. The first, third, and fifth harmonics were all more amplified than the others. The other pattern, which sounded lower, consisted of a dominant frequency at 1800 Hz with only weakly developed harmonics. A typical Honking sequence lasted about 30 seconds and was often accompanied by regular bobbing of the head and neck, especially when two screamers were together. Moo Cos and Trumpets (see below) were sometimes inserted into a Honking Sequence.

*Trumpet*—a loud bugle-like call that carried more effectively over long distances than the other calls. It consisted of a low diffuse introductory note followed by an inflected note with a fundamental frequency at 1000 Hz and four to five well-developed harmonics. The dominant frequency was at 2600 Hz, as in the one Honking pattern.

On one occasion we watched for several hours a lone screamer perched in a tall tree by the edge of the lake. This individual called regularly, partly in response to calls from the other side of the lake. A calling sequence usually began with a series of Moo Cos that increased in intensity and then shifted into loud Honking. The Honking consisted of both notes in various combinations and, on some occasions, included interspersed Moo Cos and Trumpets. Even in more complex situations, with two or more individuals Honking, sequences were usually preceded by a short series of Moo Cos of increasing intensity. Trumpetings were nearly always associated with Honking.

Soft Moo Cos were the first screamer vocalizations heard in the early morning. Typically calling was initiated twenty minutes before sunrise and continued for only about five minutes. Vigorous calling, including Moo Cos, Honking, and Trumpeting, began at sunrise from around the lake and continued sporadically until about 09:00, when the birds began feeding. Only occasional calls were heard during the rest of the day. At sunset some pairs called briefly just after flying up to the elevated perches that may have been their roosts, but we heard no conspicuous evening chorus.

Movement of individuals between perches in trees was often accompanied by some calling. Only three of 30 lone individuals called before taking off, but if several birds were present at the departure, Honking occurred about 30 percent (10 of 33 cases) of the time. Typically (32 of 44 cases), the moving individual was greeted with Honking by others as it approached them, and after it landed all individuals Honked loudly for one to two minutes. A lone individual landing on an unoccupied perch rarely called (only three of 19 cases) and flying birds never called. The calling that accompanied these relocations stimulated calling by adjacent groups of screamers 76 percent of the time. Movements from trees to the ground were usually accomplished silently, except for occasional calls by adjacent groups.

Bouts of calling between isolated groups, up to one mile apart, were a conspicuous component of screamer vocal activity. Typically such calling involved extended Honking sequences with some Trumpeting. Particular groups or individuals seemed to respond to the calling of another group approximately 15 seconds after the calling was heard. Sequential calling between isolated groups lasted up to 20 minutes, but usually was not more than ten minutes, with individual groups calling at approximately one minute intervals. A maximum of five of the seven isolated groups were involved in any one bout. No consistent pattern of sequencing between groups could be discerned.

Some evidence of responsiveness to vocalizations was obtained by W. E. Lanyon (pers. comm.) during his visit to Mozambique in May 1972. He recorded a pair that was Honking and Trumpeting several hundred yards away and played the recording back to them. The pair of screamers promptly flew to the trees overhead and gave repeated Moo Cos, Ha Moo Cos and occasional Honking.

In general, Moo Cos tended to indicate alarm or disturbance by potential predators or the relocations of other screamers, but were also included in distance calling and greeting. Honking was used in both greeting and in distance calling. Trumpets were used primarily in distance calling but occasionally in high intensity greeting.

#### DISCUSSION

Outside of pairs or family groups, Horned Screamers appear to be only semi-social in their habits as we saw no conspicuous flocking. Such pairs or family units associated loosely in a remote corner of the lake where good grazing existed. We could not tell if the members of this association were mainly subadult birds, though with more experience or at closer range this might be discernible on the basis of the length of the horn (Spence, 1959). Pairs scattered around the lake may have been established adults. Distance communication between such pairs seemed an important routine.

In most respects, Horned Screamers seem to resemble the Crested Screamer, *Chauna torquata*. The latter typically occurs in pairs (Wetmore, 1926; Hudson, 1920), but unlike the Horned Screamer, it may sometimes occur in large grazing flocks of a thousand or more birds (Hudson, 1920). The nests are similar but Horned Screamer eggs are olive-brown rather than white as in the Crested Screamer. Like the Crested Screamer (Stonor, 1939), male Horned Screamers share in the building of the nest and incubation (Lint, 1956). Horned Screamers appear to have a poorer flight capacity than

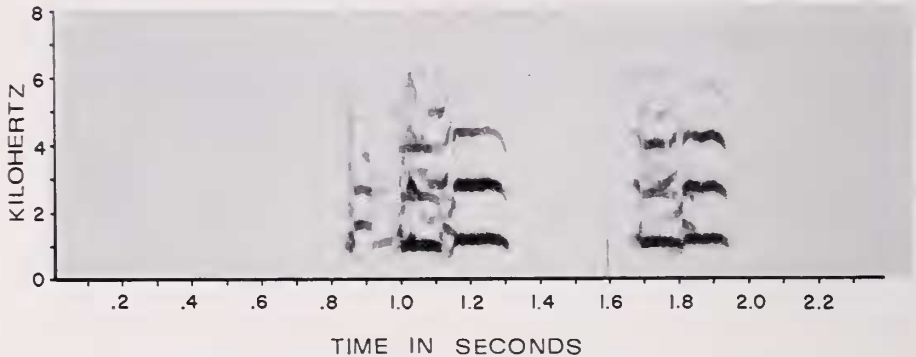


FIG. 2. Typical "chaja" Call of the Crested Screamer, *Chauna torquata*.

Crested Screamers, judging from their relatively few and short flights and the absence of soaring.

The common double-noted trumpeting call of the Crested Screamer (Fig. 2), is similar in structure to the Trumpet Call of the Horned Screamer though it contains fewer harmonics. Hudson (1920) indicates that a similar call may function as an alarm cry in the Crested Screamer, but does not describe any Moo Co-like call. Crested Screamers also have a loud singing ceremony involving both the male and female, or sometimes a whole flock (Hudson, 1920:133). This is probably homologous to what we have called Honking. Male and female *Chauna* do not have different calls (Kear, 1970: Lint, in litt.).

The fundamental frequencies of Horned Screamer sounds are low and similar to those of Magpie Geese (*Anseranas semipalmata*) and large swans (Johnsgard, 1972), in which long-distance communication is also important. If the trachea of Horned Screamers is acting as an open tube system, as appears to be the case in other waterfowl, such sound production suggests a tracheal length of about 30 cm, which is as long as that of a large swan. However, we have not found any published description of a screamer trachea.

Screamers have traditionally been allied with the Anseriformes (Johnsgard, 1965; Kear, 1970; Sibley and Ahlquist, 1972). In particular, screamers resemble the Magpie Goose in behavior, that of the latter containing many primitive features (Johnsgard, 1965; Kear, 1970). Sexual dimorphism in voice, found in the Magpie Goose (Johnsgard, 1972) and the Horned Screamer—but not in *Chauna*, is lacking in the Anserinae but is present in more advanced ducks. The Magpie Goose has well-developed preflight signals including lateral headshaking and associated goose-like calling (Johnsgard, 1965). Such behavior seems lacking in the Horned Screamer, which calls



irregularly and to our knowledge did not shake its head before taking off. Low intensity threat displays and triumph ceremonies involve wing shaking in the Magpie Goose (Johnsgard, 1965), versus shelduck-like wing flapping in the Horned Screamer (Spence, 1959). It seems likely, therefore, that the resemblances between screamers and the Magpie Goose could be only superficial and convergent (Davies and Frith, 1964).

#### SUMMARY

A population of 35 Horned Screamers was observed for eight days in the llanos of Colombia. The birds tended to be sedentary, remaining on a single perch for as much as two hours during the morning. Occasional flights to new perches were rarely longer than 200 m. The birds were never seen soaring and only rarely seen flying.

Three basic vocalizations were used—loud goose-like Honking and Trumpeting and a somewhat melodious Moo Co. Calls were limited almost completely to the morning hours before the birds fed. Isolated pairs frequently duet with the Moo Co. primarily in response to disturbance. Arrivals of relocating individuals were typically accompanied by Honking, often with head bobbing. Communication between groups scattered around the lake involved Honking, Trumpeting and Moo Cos. The low fundamental frequencies and the well-developed harmonic of these calls suggest a long trachea (about 30 cm).

Comparison is made with the other two members of the family—*Chauna chavaria* and *C. torquata*, and the behavior of certain waterfowl, especially the Magpie Goose, *Anseranas*.

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